

WHAT is CLAIMED.

1). An apparatus for regulating components of rotary machines for decoration of ceramic tiles, of a type where, on a mobile rest plane on which the tiles are translated in a predetermined direction, the following operate: a matrix-bearing cylinder, mobile in rotation about an axis thereof, which matrix-bearing cylinder is provided with at least an elastically-deformable peripheral part having a smooth external cylindrical surface made of an elastomer material, on which smooth external cylindrical surface a shape is cut and recessed, which shape is a matrix; at least a doctor predisposed for operating in contact with the external surface of the matrix-bearing cylinder; wherein it also comprises:

a vertically-developing frame;

a first slide constrained on the vertically-developing frame and slidable vertically with respect thereto; the matrix-bearing cylinder being supported on the first slide, together with organs for supporting the matrix-bearing cylinder and organs for controlling rotation thereof about a rotation axis thereof;

a second slide constrained on the vertically-developing frame and sliding vertically with respect thereto; at least one doctor being supported on the second slide, together with organs for supporting the at least one doctor and organs for controlling movements of the at least one doctor;

means for relatively positioning the first slide and the second slide relative

to the vertically-developing frame.

2). The apparatus of claim 1, wherein the means for relatively positioning comprise: a maneuvering screw having a vertical axis, on which maneuvering screw are coupled a first nut, which is solidly constrained to the first slide, and a second nut, which is solidly constrained in translation along the vertical axis to the second slide and which is mobile in rotation about the vertical axis with respect to the second slide (4), which vertical axis is also a rotation axis of the second nut and the first nut.

3). The apparatus of claim 2, wherein the maneuvering screw is commanded to perform rotations of predetermined entities about the vertical axis of rotation thereof by a first step motor; the second nut being commanded to perform rotations of predetermined entities about the vertical axis of rotation and with respect to the second slide by a second step motor which is solidly constrained to the second slide.

4). The apparatus of claim 2 or 3, wherein the second slide is connected to a shaft for supporting the doctor, which shaft is positioned parallel to the axis of rotation of the matrix-bearing cylinder and which shaft is coaxially supported in a sleeve.

5). The apparatus of claim 4, wherein the second slide is associated to means for controlling a regulation of an inclination of the at least one doctor and also for controlling a pressure with which the at least one doctor is pressed contactingly against an external surface of the matrix-bearing cylinder; the means comprising a linear actuator operating in two directions between the second slide and a second end of a lever, a first end of which is solidly constrained in rotation to the shaft and a measuring device, which measuring device also operates between the second slide and the second end of the lever in order to measure displacements of the second slide with respect to a

predetermined reference position.

6). The apparatus of claim 5, wherein the linear actuator operates together with a force measuring device, which measures an overall force which is exerted by the linear actuator on the lever.

7). The apparatus of claim 4, wherein the shaft is supported by a free coupling in the sleeve and is coupled to the lever rotatably solidly and axially slidably; the shaft exhibiting an end affording a slot internally of which a cam pivot is engaged, which cam pivot is solidly constrained to a spindle shaft; the spindle shaft being commanded to rotate about a perpendicular axis to the axis of the shaft by a step motor and belt transmission.

8). The apparatus of claim 7, wherein the doctor is fixed to a support frame affording coaxial housings internally of which support frame the shaft is snugly coupled, which shaft affords a transversal hollow seating; the transversal hollow seating stably coupling with a pivot mounted eccentrically on the support frame and activated by a lever in order to pass from the stable coupling position with the hollow seating to a completely uncoupled position in which the shaft is free inside the coaxial housings.

9). The apparatus of claim 8, wherein the hollow seating is constituted by a portion of straight, circular cylindrical surface and in that the pivot exhibits an external diameter which is equal to a diameter of the portion of straight, circular cylindrical surface delimiting the hollow seating.